



## **DEPARTMENT OF TRANSPORTATION**

### **Federal Aviation Administration**

#### **14 CFR Part 39**

**[Docket No. FAA-2022-0399; Project Identifier MCAI-2021-00983-T; Amendment 39-22083; AD 2022-12-11]**

**RIN 2120-AA64**

**Airworthiness Directives; Embraer S.A. (Type Certificate Previously Held by Yaborã Indústria Aeronáutica S.A.) Airplanes**

**AGENCY:** Federal Aviation Administration (FAA), DOT.

**ACTION:** Final rule.

**SUMMARY:** The FAA is adopting a new airworthiness directive (AD) for certain Embraer S.A. Model ERJ 190-100 ECJ airplanes. This AD was prompted by a determination that new or more restrictive airworthiness limitations are necessary and that some life limits on some components used on the main landing gear (MLG) may not be properly controlled, due to interchanging those parts between airplane models with different operational loads during repair or overhaul. This AD requires revising the existing maintenance or inspection program, as applicable, to incorporate new or more restrictive airworthiness limitations; reviewing maintenance records of the MLG assemblies to determine if any life-limited item has been replaced and reporting those findings; and re-identifying the MLG assemblies and certain components; as specified in an Agência Nacional de Aviação Civil (ANAC) AD, which is incorporated by reference. This AD also prohibits installing certain part numbers. The FAA is issuing this AD to address the unsafe condition on these products.

**DATES:** This AD is effective [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in this AD as of [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

**ADDRESSES:** For material incorporated by reference (IBR) in this AD, contact ANAC, Aeronautical Products Certification Branch (GGCP), Rua Dr. Orlando Feirabend Filho, 230 – Centro Empresarial Aquarius – Torre B – Andares 14 a 18, Parque Residencial Aquarius, CEP 12.246-190 – São José dos Campos – SP, Brazil; telephone 55 (12) 3203-6600; email [pac@anac.gov.br](mailto:pac@anac.gov.br); Internet [www.anac.gov.br/en/](http://www.anac.gov.br/en/). You may find this IBR material on the ANAC website at <https://sistemas.anac.gov.br/certificacao/DA/DAE.asp>. You may view this material at the FAA, Airworthiness Products Section, Operational Safety Branch, 2200 South 216th St., Des Moines, WA. For information on the availability of this material at the FAA, call 206-231-3195. It is also available in the AD docket at [www.regulations.gov](http://www.regulations.gov) by searching for and locating Docket No. FAA-2022-0399.

#### **Examining the AD Docket**

You may examine the AD docket at [www.regulations.gov](http://www.regulations.gov) by searching for and locating Docket No. FAA-2022-0399; or in person at Docket Operations between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this final rule, the mandatory continuing airworthiness information (MCAI), any comments received, and other information. The address for Docket Operations is U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE, Washington, DC 20590.

**FOR FURTHER INFORMATION CONTACT:** Krista Greer, Aerospace Engineer, Large Aircraft Section, FAA, International Validation Branch, 2200 South 216th St., Des Moines, WA 98198; telephone and fax 206-231-3221; email [krista.greer@faa.gov](mailto:krista.greer@faa.gov).

#### **SUPPLEMENTARY INFORMATION:**

## **Background**

ANAC, which is the aviation authority for Brazil, has issued ANAC AD 2021-08-01, effective August 31, 2021 (ANAC AD 2021-08-01) (also referred to as the MCAI), to correct an unsafe condition for certain Embraer S.A. Model ERJ 190-100 ECJ airplanes.

The FAA issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 by adding an AD that would apply to certain Embraer S.A. Model ERJ 190-100 ECJ airplanes. The NPRM published in the *Federal Register* on April 8, 2022 (87 FR 20787). The NPRM was prompted by a determination that new or more restrictive airworthiness limitations are necessary and that some life limits on some components used on the MLG may not be properly controlled, due to interchanging those parts between airplane models with different operational loads during repair or overhaul. The NPRM proposed to require revising the existing maintenance or inspection program, as applicable, to incorporate new or more restrictive airworthiness limitations; reviewing maintenance records of the MLG assemblies to determine if any life-limited item has been replaced and reporting those findings; and re-identifying the MLG assemblies and certain components; as specified in ANAC AD 2021-08-01. The NPRM also proposed to prohibit installing certain part numbers.

The FAA is issuing this AD to address potentially inadequate life limits on the MLG due to different operational loads, which could impact the structural integrity of the airplane. See the MCAI for additional background information.

## **Discussion of Final Airworthiness Directive**

### **Comments**

The FAA received a comment from The Air Line Pilots Association, International (ALPA), who supported the NPRM without change.

## **Conclusion**

The FAA reviewed the relevant data, considered the comment received, and determined that air safety requires adopting this AD as proposed. Except for minor editorial changes, this AD is adopted as proposed in the NPRM. None of the changes will increase the economic burden on any operator. Accordingly, the FAA is issuing this AD to address the unsafe condition on these products.

## **Related Service Information under 1 CFR Part 51**

ANAC AD 2021-08-01 specifies new or more restrictive airworthiness limitations for airplane structures and safe life limits; reviewing maintenance records of the MLG side stay assembly and the MLG shock strut assembly to determine if any life-limited item has been replaced and reporting those findings; and reidentifying certain part numbers of the MLG side stay assembly and the MLG shock strut assembly and their components. ANAC AD 2021-08-01 also specifies prohibiting the installation of certain part numbers. This material is reasonably available because the interested parties have access to it through their normal course of business or by the means identified in the ADDRESSES section.

## **Interim Action**

The FAA considers this AD interim action. The inspection reports required by this AD will enable the manufacturer to gain better insight into the extent to which components have been interchanged between models and determine if additional actions are required to address the identified unsafe condition. Based on the result of the manufacturer's analyses, the FAA might consider further rulemaking

## **Costs of Compliance**

The FAA estimates that this AD affects 10 airplanes of U.S. registry. The FAA estimates the following costs to comply with this AD:

The FAA has determined that revising the existing maintenance or inspection program takes an average of 90 work-hours per operator, although the agency recognizes that this number may vary from operator to operator. Since operators incorporate maintenance or inspection program changes for their affected fleet(s), the FAA has determined that a per-operator estimate is more accurate than a per-airplane estimate. Therefore, the agency estimates the average total cost per operator to be \$7,650 (90 work-hours x \$85 per work-hour).

**Estimated costs for required actions\***

<b>Labor cost</b>	<b>Parts cost</b>	<b>Cost per product</b>	<b>Cost on U.S. operators</b>
6 work-hours X \$85 per hour = \$510	\$0	\$510	\$5,100

\*Table does not include estimated costs for reporting and revising the existing maintenance or inspection program.

The FAA estimates that it would take about 1 work-hour per product to comply with the reporting requirement in this AD. The average labor rate is \$85 per hour. Based on these figures, the FAA estimates the cost of reporting on U.S. operators to be \$850, or \$85 per product.

According to the manufacturer, some or all of the costs of this AD may be covered under warranty, thereby reducing the cost impact on affected individuals. The FAA does not control warranty coverage for affected individuals. As a result, the FAA has included all known costs in the cost estimate.

**Paperwork Reduction Act**

A federal agency may not conduct or sponsor, and a person is not required to respond to, nor shall a person be subject to a penalty for failure to comply with a collection of information subject to the requirements of the Paperwork Reduction Act unless that collection of information displays a current valid OMB Control Number. The OMB Control Number for this information collection is 2120-0056. Public reporting for

this collection of information is estimated to take approximately 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. All responses to this collection of information are mandatory. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to: Information Collection Clearance Officer, Federal Aviation Administration, 10101 Hillwood Parkway, Fort Worth, TX 76177-1524.

### **Authority for this Rulemaking**

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. Subtitle VII: Aviation Programs, describes in more detail the scope of the Agency's authority.

The FAA is issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701: General requirements. Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

### **Regulatory Findings**

This AD will not have federalism implications under Executive Order 13132. This AD will not have a substantial direct effect on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify that this AD:

- (1) Is not a “significant regulatory action” under Executive Order 12866,
- (2) Will not affect intrastate aviation in Alaska, and
- (3) Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

#### **List of Subjects in 14 CFR Part 39**

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

#### **The Amendment**

Accordingly, under the authority delegated to me by the Administrator, the FAA amends 14 CFR part 39 as follows:

#### **PART 39 - AIRWORTHINESS DIRECTIVES**

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

#### **§ 39.13 [Amended]**

2. The FAA amends § 39.13 by adding the following new airworthiness directive:

**2022-12-11 Embraer S.A. (Type Certificate Previously Held by Yaborã Indústria Aeronáutica S.A.):** Amendment 39-22083; Docket No. FAA-2022-0399; Project Identifier MCAI-2021-00983-T.

#### **(a) Effective Date**

This airworthiness directive (AD) is effective [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

#### **(b) Affected ADs**

None.

#### **(c) Applicability**

This AD applies to Embraer S.A. (Type Certificate Previously Held by Yaborã Indústria Aeronáutica S.A.) Model ERJ 190-100 ECJ airplanes, certificated in any

category, as identified in Agência Nacional de Aviação Civil (ANAC) AD 2021-08-01, effective August 31, 2021 (ANAC AD 2021-08-01).

**(d) Subject**

Air Transport Association (ATA) of America Code 05, Time Limits/Maintenance Checks; 32, Landing Gear.

**(e) Unsafe Condition**

This AD was prompted by a determination that new or more restrictive airworthiness limitations are necessary and that some life limits on some structural parts used on the main landing gear (MLG) may not be properly controlled, due to interchanging those parts between airplane models with different operational loads during repair or overhaul. The FAA is issuing this AD to address potentially inadequate life limits on the MLG due to different operational loads, which could impact the structural integrity of the airplane.

**(f) Compliance**

Comply with this AD within the compliance times specified, unless already done.

**(g) Requirements**

Except as specified in paragraph (h) of this AD: Comply with all required actions and compliance times specified in, and in accordance with, ANAC AD 2021-08-01.

**(h) Exceptions to ANAC AD 2021-08-01**

(1) Where ANAC AD 2021-08-01 refers to its effective date, this AD requires using the effective date of this AD.

(2) The initial compliance time for doing the tasks specified in paragraph (a) of ANAC AD 2021-08-01 is no later than the applicable “life limit cycles” specified in the service information referenced in ANAC AD 2021-08-01, or within 90 days after the effective date of this AD, whichever occurs later.



(3) Paragraph (b) of ANAC AD 2021-08-01 specifies to report inspection results to Embraer within a certain compliance time. For this AD, report inspection results at the applicable time specified in paragraph (h)(3)(i) or (ii) of this AD.

(i) If the inspection was done on or after the effective date of this AD: Submit the report within 90 days after the inspection.

(ii) If the inspection was done before the effective date of this AD: Submit the report within 90 days after the effective date of this AD.

(4) The “Alternative Method of Compliance (AMOC)” section of ANAC AD 2021-08-01 does not apply to this AD.

**(i) Provisions for Alternative Actions and Intervals**

After the existing maintenance or inspection program has been revised as required by paragraph (g) of this AD, no alternative actions (e.g., inspections) and intervals are allowed, unless they are approved as specified in paragraph (a) of ANAC AD 2021-08-01.

**(j) Additional AD Provisions**

The following provisions also apply to this AD:

(1) *Alternative Methods of Compliance (AMOCs)*: The Manager, Large Aircraft Section, International Validation Branch, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or responsible Flight Standards Office, as appropriate. If sending information directly to the Large Aircraft Section, International Validation Branch, send it to the attention of the person identified in paragraph (k) of this AD. Information may be emailed to: 9-AVS-AIR-730-AMOC@faa.gov. Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the responsible Flight Standards Office.

(2) *Contacting the Manufacturer:* For any requirement in this AD to obtain instructions from a manufacturer, the instructions must be accomplished using a method approved by the Manager, Large Aircraft Section, International Validation Branch, FAA; or ANAC; or ANAC's authorized Designee. If approved by the ANAC Designee, the approval must include the Designee's authorized signature.

**(k) Related Information**

For more information about this AD, contact Krista Greer, Aerospace Engineer, Large Aircraft Section, FAA, International Validation Branch, 2200 South 216th St., Des Moines, WA 98198; telephone and fax 206-231-3221; email [krista.greer@faa.gov](mailto:krista.greer@faa.gov).

**(l) Material Incorporated by Reference**

(1) The Director of the Federal Register approved the incorporation by reference of the service information listed in this paragraph under 5 U.S.C. 552(a) and 1 CFR part 51.

(2) You must use this service information as applicable to do the actions required by this AD, unless this AD specifies otherwise.

(i) Agência Nacional de Aviação Civil (ANAC) AD 2021-08-01, effective August 31, 2021.

(ii) [Reserved]

(3) For ANAC AD 2021-08-01, contact ANAC, Aeronautical Products Certification Branch (GGCP), Rua Dr. Orlando Feirabend Filho, 230 – Centro Empresarial Aquarius – Torre B – Andares 14 a 18, Parque Residencial Aquarius, CEP 12.246-190 – São José dos Campos – SP, Brazil; telephone 55 (12) 3203-6600; email [pac@anac.gov.br](mailto:pac@anac.gov.br); Internet [www.anac.gov.br/en/](http://www.anac.gov.br/en/). You may find this ANAC AD on the ANAC website at <https://sistemas.anac.gov.br/certificacao/DA/DAE.asp>.

(4) You may view this material at the FAA, Airworthiness Products Section, Operational Safety Branch, 2200 South 216th St., Des Moines, WA. For information on the availability of this material at the FAA, call 206-231-3195.

(5) You may view this material that is incorporated by reference at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, email [fr.inspection@nara.gov](mailto:fr.inspection@nara.gov), or go to: [www.archives.gov/federal-register/cfr/ibr-locations.html](http://www.archives.gov/federal-register/cfr/ibr-locations.html).

Issued on June 10, 2022.

Christina Underwood, Acting Director,  
Compliance & Airworthiness Division,  
Aircraft Certification Service.

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